



Attorney's Docket No. 024445-014

Application No. 10/073,239

Page 2

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Original) A cutting tool comprising:
a body comprising sintered cemented carbide, cermet or ceramic; and
a hard and wear resistant coating on at least functional parts of the body, said
coating comprising a structure of one or more refractory layers of which at least one layer
comprises an alumina layer having a thickness of 0.5-25 μm , and consisting essentially of
single phase α -alumina textured in the [300]-direction with a texture coefficient larger than
1.5, the texture coefficient being defined as:

$$TC(hkl) = \frac{I(hkl)}{I_0(hkl)} \left\{ \frac{1}{n} \sum \frac{I(hkl)}{I_0(hkl)} \right\}^{-1}$$

where

$I(hkl)$ = measured intensity of the (hkl) reflection,

$I_0(hkl)$ = standard intensity of the ASTM standard,

powder pattern diffraction data, card number 43-1484,

n = number of reflections used in the calculation

(hkl) reflections used are: (012), (104), (110),

(113), (024), (116) and (300).

RECEIVED
SEP 3 0 2003
TC 1700

2. (Original) The cutting tool according to claim 1, wherein the alumina layer has a thickness of 1-10 μm .

3. (Original) The cutting tool according to claim 1, wherein the texture coefficient is larger than 3.

4. (Original) The cutting tool according to claim 1, wherein the texture coefficient is larger than 5.

5. (Original) The cutting tool according to claim 1, wherein the α -alumina layer contains 0.01-10 percent by weight of residues of a texture modifying agent.

6. (Original) The cutting tool according to claim 5, wherein the α -alumina layer contains 0.01-5 percent by weight of residues of a texture modifying agent.

7. (Original) The cutting tool according to claim 5, wherein the α -alumina layer contains less than 1 percent by weight of residues of a texture modifying agent.

8. (Currently Amended) The cutting tool according to claim 1, further comprising at least one layer having a thickness of 0.1-10 μm , comprising a nitride,

carbide, carbonitride, oxycarbide and/or oxycarbonitride of the metal titanium ($TiC_xN_yO_z$) and that said layer is in contact with the α -alumina layer.

9. (Original) The cutting tool according to claim 8, wherein the at least one layer has a thickness of 0.5-5 μm .

10. (Currently Amended) The cutting tool according to claim 8, wherein the coating comprises an outer layer, and the outer layer is α -alumina.

11. (Currently Amended) The cutting tool according to claim 1, wherein the coating comprises an outer layer, and the outer layer is TiN.

12. (Original) The cutting tool according to claim 1, the surface of the coated cutting tool is smoothed by means of a brushing operation.

13. (Withdrawn) A method of producing a coated cutting tool comprising at least one layer of textured α -alumina, the method comprising:
introducing a tool surface to be coated into a reactive atmosphere comprising H₂ and/or Ar;
providing the reactive atmosphere with a concentration of oxidizing species below 5 ppm;
initiating nucleation of the α -alumina layer on the surface by first introducing HC1 and CO₂ gasses into the atmosphere, then introducing AlCl₃ gas into the atmosphere;

maintaining a temperature of 950-1050°C during nucleation of the α -alumina layer; and introducing a catalyst and a texture modifying agent into the atmosphere during growth of the α -alumina layer.

14. (Withdrawn) The method according to claim 13, wherein the oxidizing species comprises water vapor, the catalyst comprises H₂S, and the texture modifying agent comprises ZrCl₄.

15. (Withdrawn) The method according to claim 13, wherein 0.05-10 percent by volume of the texture modifying agent is introduced.

16. (Withdrawn) The method according to claim 13, wherein 0.2-5 percent by volume of the texture modifying agent is introduced.

17. (Withdrawn) The method according to claim 13, wherein 0.5-2 percent by volume of the texture modifying agent is introduced.

18. (Withdrawn) A method according to claim 14, wherein the addition of the texture modifying agent to the reaction gas mixture is 0.05-10 percent by volume of the total reaction gas mixture.

19. (Withdrawn) The method according to claim 18, wherein the addition of the texture modifying agent is 0.2-5 percent by volume of the total reaction gas mixture.

20. (Withdrawn) The method according to claim 18, wherein the addition of the texture modifying agent is 0.5-2 percent by volume of the total reaction gas mixture.